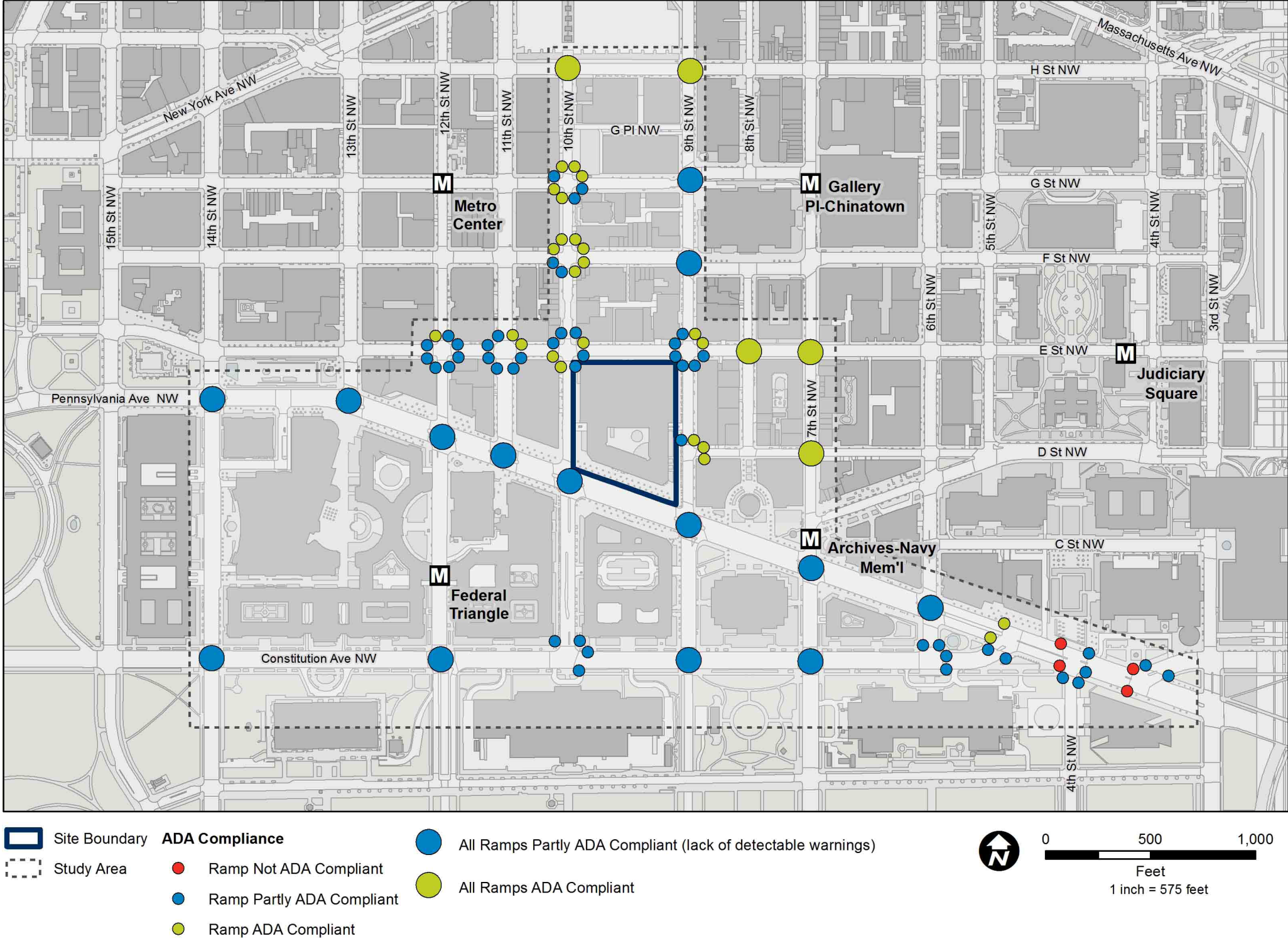


ADA Compliance

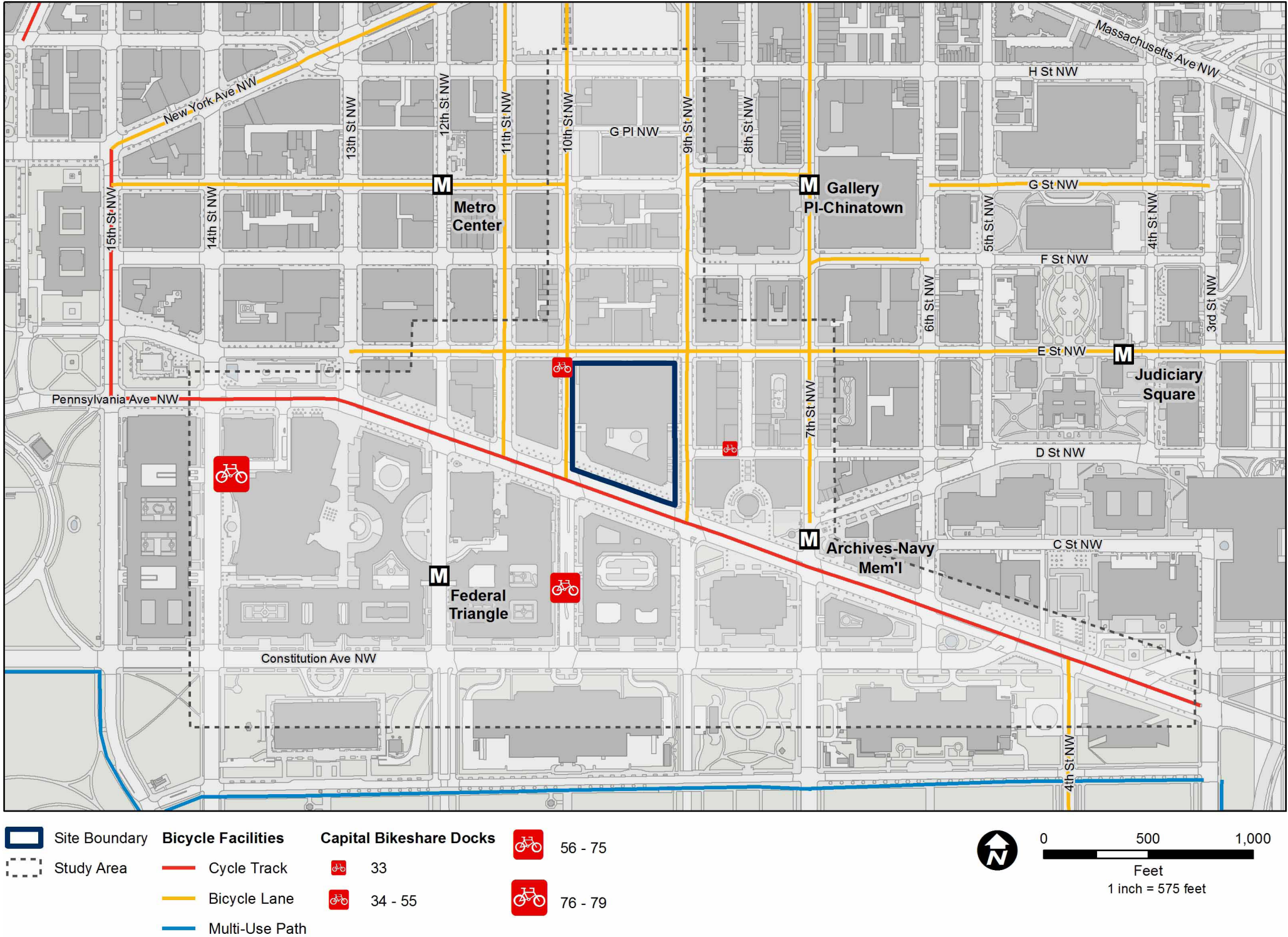
Sidewalks in the pedestrian network in the study area range from 2 feet wide through upwards of 30 feet in some locations. According to the ADA, there is a minimum requirement of 3-foot clearances for curb ramps connecting the sidewalk to crosswalks (USDOJ 2007). According to DDOT, ADA-compliant curb ramps are at least 4 feet wide and have detectable warnings (i.e., dome-shaped bumps) on the surface (DDOT 2009a). Figure 4-20 lays out a detailed depiction of the state of ADA compliance at crosswalks in the study area. As illustrated in figure 4-20, most of the curbs in the study area are at least partly compliant; their shortcoming is the lack of detectable warnings. The curbs in the vicinity of the JEH parcel, and the curbs in proximity to the neighboring Metrorail stations in the study area, are all wholly or partially compliant. Only four of the curb ramps within the study area are not ADA-compliant; these are all located at the intersections of Constitution Avenue NW and Pennsylvania Avenue NW (east intersection) and Constitution/Pennsylvania Avenue NW and 4th Street NW. The information for figure 4-20 was gathered during site visits on July 16 and 17, 2014.

Figure 4-20: JEH Parcel ADA Compliant Curb Ramps



Sources:
ESRI (2013), GSA (2013), DC GIS (2013)

Figure 4-21: Existing Bicycle Facilities within the JEH Parcel Study Area



Sources:
ESRI (2013), GSA (2013), DC GIS (2013), DDOT (2014), Capital Bikeshare (2014)

4.1.9.6 Bicycle Network

There are a number of bicycle facilities on roadways and Capital Bikeshare stations within the JEH parcel study area. Bicycle facilities include cycle track and bicycle lanes. Cycle tracks allow two-way bicycle travel in a marked lane that is typically separated from vehicle travel lanes by a physical barrier. Bicycle lanes are marked lanes that allow one-way bicycle travel, typically in the same direction as adjacent vehicle travel lanes. Bicycle lanes may or may not be separated from vehicle travel lanes by physical barriers. Portions of E Street NW, 11th Street NW, 10th Street NW, 9th Street NW, 7th Street NW, 4th Street NW, and G Street NW all have bicycle lanes within the study area. Additionally, Pennsylvania Avenue NW has a cycle track in the center of the roadway. The four roadways that surround the JEH parcel (9th Street NW, 10th Street NW, E Street NW, and Pennsylvania Avenue NW) all have bicycle facilities. Table 4-11 and figure 4-21 summarize bicycle facilities in the study area.

There is one major gap in bicycle facilities within the study area. There are no north-south facilities between Pennsylvania Avenue NW and Constitution Avenue NW that connect to the trails along the National Mall. The reasons for this may include the lack of roadway space to stripe a bicycle lane, Federal building set-back requirements, or heavy traffic volumes (DDOT 2005).

Within 2 miles of the JEH parcel there are numerous bicycle accommodations, including several shared use paths along the National Mall, the Rock Creek Trail, the Metropolitan Branch Trail, and the Mount Vernon Trail in Arlington, Virginia. Appendix B has further details on bicycle accommodations within 2 miles of the site.

Capital Bikeshare

There are five Capital Bikeshare stations within the study area for the JEH parcel. Capital Bikeshare was launched in 2010 and currently has 326 stations in Washington, D.C.; Arlington County, Virginia; Alexandria, Virginia; and Montgomery County, Maryland. Capital Bikeshare is often used as a “last mile” connection between transit stations or stops and users’ places of work or living. The system is created to support one-way trips; a bicycle is picked up at one location and dropped off at another, without a need to secure the bike in-between trips or make a return trip to the same starting point. Table 4-12 and figure 4-21 summarize these stations, their distance to the JEH parcel, and the number of bicycle docks available at each.

The JEH TIA (Appendix B) contains the Capital Bikeshare trip purpose, ridership patterns, and station use.

Table 4-11:Existing Bicycle Facilities within the JEH Parcel Study Area

Street Name	Limits in Study Area	Type
Pennsylvania Avenue NW	West of Constitution Avenue	Cycle track
E Street NW	Through entire study area	Bicycle lane
11th Street NW	North of Pennsylvania Avenue	Bicycle lane
10th Street NW	North of Pennsylvania Avenue	Bicycle lane
9th Street NW	North of Pennsylvania Avenue	Bicycle lane
7th Street NW	North of Indiana Avenue	Bicycle lane
4th Street NW	South of Pennsylvania Avenue	Bicycle lane
G Street NW	East of 9th Street and west of 10th Street	Bicycle lane

Source: DC GIS (2014)

Table 4-12: Capital Bikeshare Stations within the JEH Parcel Study Area

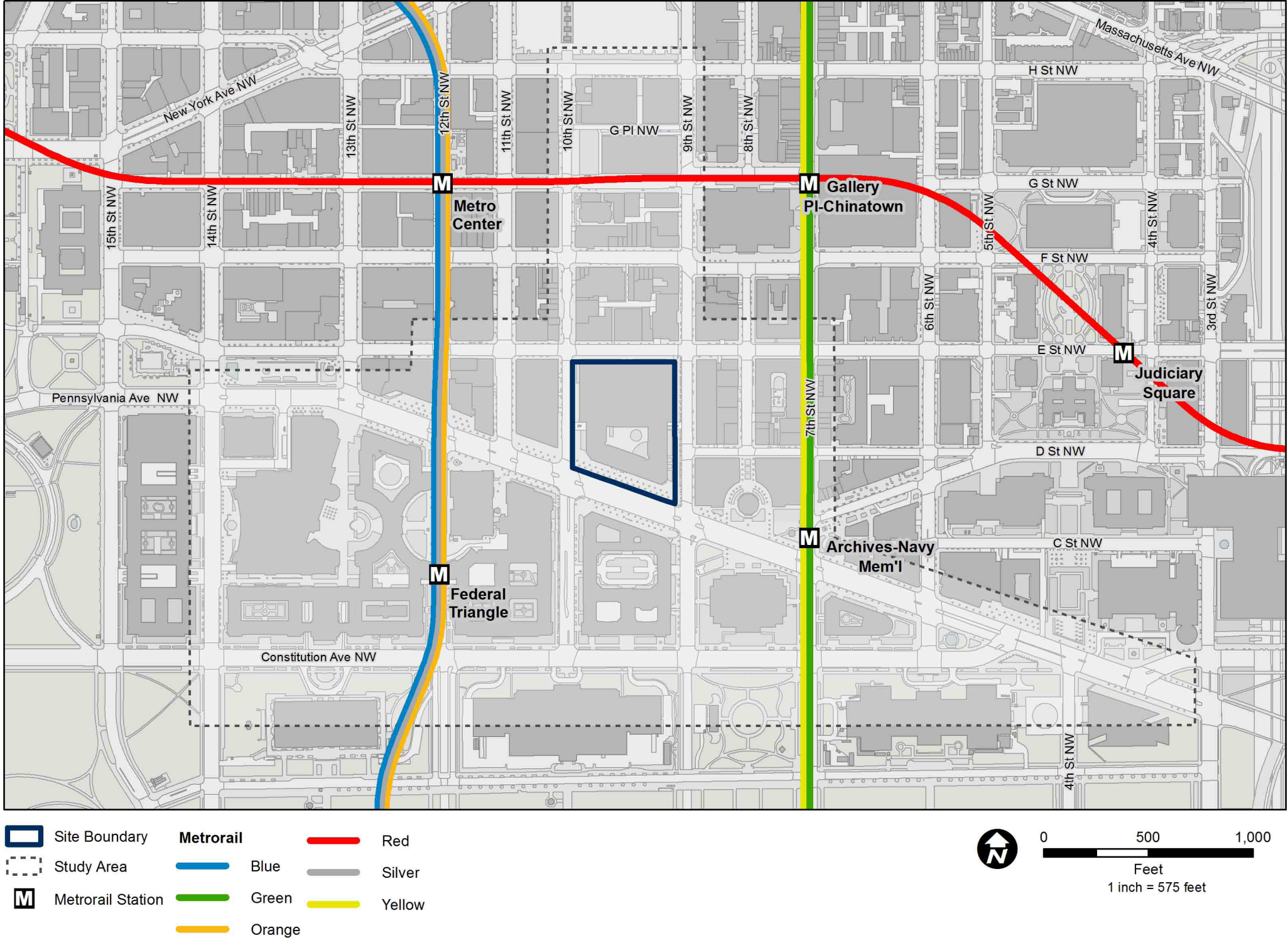
Station	Number of Docks	Distance to JEH (miles)
10th Street & E Street NW	15	0.05
10th Street & Constitution Avenue NW	29	0.1
14th Street & D Street NW (Ronald Reagan Building)	21	0.4
8th Street & D Street NW	15	0.05
9th Street & G Street NW (Martin Luther King Jr Library)	23	0.25

Source: Capital Bikeshare Station (2014)

JEH BICYCLE NETWORK

- Portions of E Street NW, 11th Street NW, 10th Street NW, 9th Street NW, 7th Street NW, 4th Street NW, and G Street NW all have bicycle lanes within the study area. Additionally, Pennsylvania Avenue NW has a cycle track in the center of the roadway
- The major gap in bicycle facilities with in the study area is the lack of north-south facilities between Pennsylvania Avenue NW and Constitution Avenue NW that connect to trails along the National Mall.
- Bicycle accommodations within the 2 miles of the JEH parcel include Capital Bikeshare, shared use paths along the National Mall, the Rock Creek Trail, the Metropolitan Branch Trail, and the Mount Vernon Trail in Arlington.

Figure 4-22: Metrorail Station Entrances in the JEH Parcel Study Area



4.1.9.7 Public Transit

This section describes the existing conditions of Metrorail, Metrobus, commuter bus, carshare facilities, slugging (casual ridesharing), and shuttles within the JEH study area. Of these modes, Metrobus and Metrorail potentially have capacity issues within the study area.

Metrorail

The JEH parcel is served by all 6 Metrorail lines via 4 Metrorail stations located in the study area. The four Metrorail stations serving the JEH parcel are Archives-Navy Memorial, Federal Triangle, Metro Center, and Gallery Place-Chinatown. Table 4-13 and figure 4-22 summarize entrance locations and lines served for each station in the study area.

Metrorail Station Frequency of Service

Metrorail service operates on all lines between 5:00 AM and 12:00 AM, Monday through Thursday, 5:00 AM and 3:00 AM on Fridays, 7:00 AM and 3:00 AM on Saturdays, and 7:00 AM and 12:00 AM on Sundays (WMATA 2014b). Peak frequencies vary between 3 and 12 minutes on all lines, while off-peak frequencies vary between 6 and 20 minutes. Several lines share tracks through the study area, including the Orange, Blue, and Silver lines (Metro Center and Federal Triangle), and the Green and Yellow lines (Gallery Place-Chinatown and Archives-Navy Memorial).

Archives-Navy Memorial Metro Station

The Archives-Navy Memorial Metro Station is served by the Green and Yellow lines. Peak headways on the Green and Yellow lines create an effective headway of 3 minutes if trains are on time. A total of 20 Green and Yellow line trains are scheduled to serve the station every hour, with 6-minute headways each on the Green and Yellow lines. Midday, evening, and Saturday daytime periods all have 12-minute scheduled headways on each line. Table 4-14 summarizes Metrorail headways and timespan by line at Archives-Navy Memorial Metro Station.

Table 4-13: Metrorail Stations and Lines in the JEH Parcel Study Area

Metrorail Station	Entrances	Lines
Archives-Navy Memorial	7th/ Pennsylvania	Green/ Yellow
Federal Triangle	12th south of Pennsylvania	Blue/ Orange/ Silver
Gallery Place-Chinatown	7th/F, 7th/H, 9th/G	Red/ Green/ Yellow
Metro Center	11th/G, 12th/G, 12th/F, 13th/G	Red/Blue/ Orange/ Silver

Source: WMATA (2014c)

Table 4-14: Archives-Navy Memorial Metrorail Headway and Timespan

Day	Timespan	Period	Headways (Minutes)		
			Green	Yellow	Green & Yellow Effective Headway
Weekday	5:00 AM – 9:30 AM 3:00 PM – 7:00 PM	Peak	6	6	3
	9:30 AM – 3:00 PM	Midday	12	12	6
	7:00 PM – 9:30 PM	Evening	12	12	6
	9:30 PM – 12:00 AM ^a	Late night	20	20	10
Saturday	7:00 AM – 9:30 PM	Daytime	12	12	6
	9:30 PM – 3:00 AM	Late night	20	20	10
Sunday	7:00 AM – 9:30 PM	Daytime	15	15	7.5
	9:30 PM – 12:00 AM	Late night	20	20	10

^a Service is extended to 3:00 AM on Fridays
Note: Effective headways are calculated by dividing an hour (60 minutes) by the total number of trains that are scheduled to serve the station during an hour. For example, on morning weekday trips, 6 minute headway = 10 trains/hour. For an effective headway of Green and Yellow lines (2 lines @ 6 minute headways each), 10 trains/hour x 2 lines = 20 trains/hour and 60 ÷ 20 = 3 minute effective headways.

Source: WMATA (2014b)

JEH PUBLIC TRANSIT

- Public transportation facilities in the study area include Metrorail, Metrobus, commuter bus, carshare facilities, slugging (casual ridesharing), and shuttle. Of these modes, Metrobus and Metrorail potentially have capacity issues within the study area.
- Several lines of the Metrorail share tracks within the study area, including the Orange, Blue, and Silver lines (Metro Center and Federal Triangle), and the Green and Yellow lines (Gallery Place-Chinatown and Archives-Navy Memorial).
- There are 35 Metrobus routes that serve the JEH parcel study area on weekdays serving the District as well as Silver Spring, Maryland; Prince George’s County, Maryland; Arlington County, Virginia; Fairfax County, Virginia; and Alexandria, Virginia.
- Commuter bus service to the study area is provided by four different transit agencies: Maryland Transit Administration (MTA), MARTZ, Potomac-Rappahannock Transit Commission (PRTC), and Loudoun County Transit (LCT).

Table 4-15: Federal Triangle Metrorail Headway and Timespan

Day	Timespan	Period	Headways (Minutes)			
			Orange	Silver	Blue	Orange, Blue & Silver Effective Headway
Weekday	5:00 AM – 9:30 AM 3:00 PM – 7:00 PM	Peak	6	6	12	2.5
	9:30 AM – 3:00 PM	Midday	12	12	12	4
	7:00 PM – 9:30 PM	Evening	12	12	12	4
	9:30 PM – 12:00 AM ^a	Late night	20	20	20	7
Saturday	7:00 AM – 9:30 PM	Daytime	12	12	12	4
	9:30 PM – 3:00 AM	Late night	20	20	20	7
Sunday	7:00 AM – 9:30 PM	Daytime	15	15	15	5
	9:30 PM – 12:00 AM	Late night	20	20	20	7

^a Service is extended to 3:00 AM on Fridays
Note: Effective headways are calculated by dividing an hour (60 minutes) by the total number of trains that are scheduled to serve the station during an hour. For example, on midday weekday trips, 12 minute headway = 5 trains/hour. For an effective headway of Orange, Blue, and Silver lines (3 lines @ 12 minute headways each), 5 trains/hour x 3 lines = 15 trains/hour and 60 ÷ 15 = 4 minute effective headways

Source: WMATA (2014b)

Table 4-16: Metro Center Metrorail Headway and Timespan

Day	Timespan	Period	Headways (Minutes)				
			Red	Orange	Silver	Blue	Orange, Blue & Silver Effective Headway
Weekday	5:00 AM – 9:30 AM 3:00 PM – 7:00 PM	Peak	3	6	6	12	2.5
	9:30 AM – 3:00 PM	Midday	12	12	12	12	4
	7:00 PM – 9:30 PM	Evening	6-10	12	12	12	4
	9:30 PM – 12:00 AM ^a	Late night	15-18	20	20	20	7
Saturday	7:00 AM – 9:30 PM	Daytime	12	12	12	12	4
	9:30 PM – 3:00 AM	Late night	15	20	20	20	7
Sunday	7:00 AM – 9:30 PM	Daytime	15	15	15	15	5
	9:30 PM – 12:00 AM	Late night	15	20	20	20	7

^a Service is extended to 3:00 AM on Fridays
Note: Effective headways are calculated by dividing an hour (60 minutes) by the total number of trains that are scheduled to serve the station during an hour. For example, on midday weekday trips, 12 minute headway = 5 trains/hour. For an effective headway of Orange, Blue, and Silver lines (3 lines @ 12 minute headways each), 5 trains/hour x 3 lines = 15 trains/hour and 60 ÷ 15 = 4 minute effective headways.

Source: WMATA (2014b)

Federal Triangle Metro Station

The Federal Triangle Metro Station is served by the Orange, Silver, and Blue lines, which all share a single platform. Peak headways on these three lines create an effective headway of 2.5 minutes if trains are on time. A total of 25 Orange, Silver, and Blue line trains are scheduled to serve the station every hour, with 6-minute scheduled headways on the Orange and Silver lines and 12-minute scheduled headways on the Blue line. Midday, evening, and Saturday daytime periods all have 12-minute headways on each line. Table 4-15 summarizes Metrorail headways and timespan by line at the Federal Triangle Metro Station.

Metro Center Metro Station

The Metro Center Metro Station is served by the Red, Orange, Silver, and Blue lines. The Red line operates on the upper platform, while the Orange, Blue, and Silver lines operate on the lower platform. Peak headways on the Red Line are scheduled to be three minutes, with every other train only operating between Silver Spring and Grosvenor-Strathmore Metro stations. All other trains operate the full length of the line between Glenmont and Shady Grove. Peak headways on the Orange, Silver, and Blue lines create an effective headway of 2.5 minutes if trains are on time. A total of 25 Orange, Silver, and Blue line trains are scheduled to serve the station every hour. Orange and Silver line trains are scheduled to serve the station every 6 minutes, and Blue line trains are scheduled to serve the station every 12 minutes. Table 4-16 summarizes Metrorail headways and timespan by line at Metro Center Metro Station.

Gallery Place-Chinatown Metro Station

The Gallery Place-Chinatown Metro Station is served by the Red, Green, and Yellow lines. The Red line operates on the upper platform, while the Green and Yellow lines operate on the lower platform. Peak headways on the Red line are scheduled to be three minutes, with every other train only operating between Silver Spring and Grosvenor-Strathmore Metro stations. All other trains operate the full length of the line between Glenmont and Shady Grove. Peak headways on the Green and Yellow lines create an effective headway of 3 minutes if trains are on time. A total of 20 Green and Yellow line trains are scheduled to serve the station every hour, with scheduled 6-minute headways each on the Green and Yellow lines. Table 4-17 summarizes Metrorail headways and timespan by line at Gallery Place-Chinatown Metro Station.

Ridership

The following sections describe Metrorail ridership at each of the Metrorail stations in the transit study area.

Weekday Ridership by Station

Weekday Metrorail ridership for the four stations in the study area was obtained for October 2013 and March 2014 from WMATA (WMATA 2014d). Table 4-18 shows average weekday Metrorail ridership for the four stations by entries and exits, highlighting peak periods. WMATA defines the AM peak period as 5:00 AM to 9:30 AM and the PM peak period as 3:00 PM to 7:00 PM. Gallery Place-Chinatown and Metro Center are among the busiest stations in the system, each with more than 23,000 average weekday passengers.

Metro Center has the highest weekday total ridership with 50,029 entries and exits, followed by Gallery Place-Chinatown with 48,107, Archives-Navy Memorial with 15,208, and Federal Triangle with 14,025. Within the study area, Metro Center represents 39 percent of all weekday activity, Gallery Place-Chinatown represents 38 percent, Archives-Navy Memorial represents 12 percent, and Federal Triangle represents 11 percent.

Table 4-17: Gallery Place-Chinatown Metrorail Headway and Timespan

Day	Timespan	Period	Headways (Minutes)			
			Red	Green	Yellow	Green & Yellow Effective Headway
Weekday	5:00 AM – 9:30 AM 3:00 PM – 7:00 PM	Peak	3	6	6	3
	9:30 AM – 3:00 PM	Midday	12	12	12	6
	7:00 PM – 9:30 PM	Evening	6-10	12	12	6
	9:30 PM – 12:00 AM ^a	Late night	15-18	20	20	10
Saturday	7:00 AM – 9:30 PM	Daytime	12	12	12	6
	9:30 PM – 3:00 AM	Late night	15	20	20	10
Sunday	7:00 AM – 9:30 PM	Daytime	15	15	15	7.5
	9:30 PM – 12:00 AM	Late night	15	20	20	10

^a Service is extended to 3:00 AM on Fridays
Note: Effective headways are calculated by dividing an hour (60 minutes) by the total number of trains that are scheduled to serve the station during an hour. For example, on morning weekday trips, 6 minute headway = 10 trains/hour. For an effective headway of Green and Yellow lines (2 lines @ 6 minute headways each), 10 trains/hour x 2 lines = 20 trains/hour and 60 ÷ 20 = 3 minute effective headways.

Source: WMATA (2014b)

Table 4-18: JEH Parcel Average Weekday Metrorail Ridership by Metro Station

Entrance	AM Peak (5:00 AM – 9:30 AM)		PM Peak (3:00 PM – 7:00 PM)		Weekday Total	
	Enter	Exit	Enter	Exit	Enter	Exit
Archives-Navy Memorial	350	4,339	4,828	883	7,535	7,673
Federal Triangle	165	4,506	4,887	562	6,982	7,043
Gallery Place-Chinatown	1,648	8,611	10,458	6,890	23,875	24,232
Metro Center	1,439	12,206	13,772	4,431	24,839	25,190

Source: WMATA (2014d)

Table 4-19: JEH Parcel Proportion of Weekday Entries and Exit Taking Place during Peak Periods

Metrorail Station Entrance	Peak Enter Percent	Peak Exit Percent
Archives-Navy Memorial	69	68
Federal Triangle	72	72
Gallery Place-Chinatown	51	64
Metro Center	61	66

Source: WMATA (2014d)

Table 4-20: JEH Parcel Peak Period Entries and Exits Proportion of Weekday Total Activity

Metrorail Station Entrance	AM Peak (5:00AM - 9:30AM)		PM Peak (3:00PM - 7:00PM)	
	Percent Enter	Percent Exit	Percent Enter	Percent Exit
Archives-Navy Memorial	8	93	16	85
Federal Triangle	4	97	90	10
Gallery Place-Chinatown	16	84	24	76
Metro Center	11	90	40	60

Source: WMATA (2014d)

All four stations have a significantly higher number of passengers exiting the station than entering the station during the AM peak period, with an opposite pattern during the PM peak period. This is consistent with stations located in high-employment downtown settings.

Peak period activity represents 63 percent of all four stations' total weekday activity. At Federal Triangle, peak period activity represents 72 percent of weekday total activity. At Archives-Navy Memorial, peak period activity represents 68 percent of weekday total activity. At Metro Center and Gallery Place-Chinatown, peak period activity represents 64 and 57 percent of weekday total activity, respectively. Table 4-20 summarizes the total weekday peak activity at each station. Table 4-19 summarizes the proportion of entries versus exits during each peak period at each station.

Weekday Ridership by Station Entrance

Table 4-21 shows the weekday ridership by station entrance for the peak periods and weekday totals. Metro Center has four entrances, Gallery Place-Chinatown has three entrances, and Archives-Navy Memorial and Federal Triangle each have one entrance.

The highest total weekday ridership activity occurs at the Gallery Place North, Gallery Place East, and Metro Center West entrances. Gallery Place North represents 18 percent of the weekday total ridership for entrances at the four stations, while Gallery Place East and Metro Center West each represent 13 percent. However, Gallery Place North is the farthest station entrance from the JEH building and is likely not used to access the study area. Archives Metro Station, the closest station entrance to the JEH building, represents the fourth highest weekday total ridership at 12 percent. Figure 4-23 illustrates AM peak entries and exits by station entrance.

Table 4-21: JEH Parcel Weekday Metrорail Ridership by Metrорail Station Entrance

Entrance	Location	AM Peak		PM Peak		Weekday Total	
		Enter	Exit	Enter	Exit	Enter	Exit
Archives-Navy Memorial	7th/Pennsylvania	350	4,339	4,828	883	7,535	7,673
Federal Triangle	12th S of Pennsylvania	165	4,506	4,887	562	6,982	7,043
Gallery Place-Chinatown, E	7th/F	299	2,641	3,217	2,965	7,828	8,885
Gallery Place-Chinatown, N	7th/H	1,226	3,929	4,849	3,074	11,916	10,971
Gallery Place-Chinatown, W	9th/G	123	2,041	2,392	851	4,131	4,376
Metro Center, E	11th/G	467	3,051	3,491	1,144	6,640	6,270
Metro Center, N	12th/G	415	1,781	2,454	951	4,534	4,358
Metro Center, S	12th/F	223	2,828	2,969	1,218	5,669	6,279
Metro Center, W	13th/G	335	4,547	4,858	1,119	7,995	8,283

Source: WMATA (2014d)